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Applicant : Jeremy Wertheimer and Carl G. DeMarcken  
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Title : COMPETITIVE AVAILABILITY TOOLS

**MAIL STOP APPEAL BRIEF – PATENTS**

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APPEAL BRIEF ON BEHALF OF

JEREMY WERTHEIMER AND CARL G. DEMARCKEN.

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**(i.) Real Party In Interest**

The real party in interest in the above application is ITA Software, Inc.

**(ii.) Related Appeals and Interferences**

The appellant is not aware of any appeals or interferences related to the above-identified patent application.

**(iii.) Status of Claims**

This is an appeal from the decision of the Primary Examiner in an Office Action dated November 23, 2004, rejecting claims 1-30 and 32, all of the claims of the above application. Claim 31 was canceled. The claims have been twice rejected. Claims 1-30 and 32 are the subject of this appeal.

**(iv.) Status of Amendments**

All amendments have been entered. Appellant has filed herewith a Notice of Appeal on **January 07, 2005.**

**(v.) Summary of Claimed Subject Matter**

**Background**

The claimed invention relates to processes that determine airline seat availability information. [Specification page 1, lines 3-5]

Airlines institute selling policies that change to meet supply and demand considerations to maximize profit on any given flight. In order to issue a ticket for a single or multi-flight segment itinerary, a seat for each flight segment must be available. This is commonly referred to in the industry as determining airline "seat availability" or "availability." Availability is governed by whether an airline has available seats on flight segments and whether characteristics of the passenger correspond to a situation where the airline can maximize profit. For instance, common characteristics include whether the passenger is willing to pay for the ticket or using a credit, whether the passenger is using other flights on that airline, whether the passenger is a frequent flyer, asking for round-trip passage, and so forth. [Specification page 1, lines 6-19]

Generally, before booking a flight and issuing a ticket, the seller sends a request for seat availability information to the airline. In general, a request for seat availability information is sent over a computer network to an airline and is processed in the airline's computer system. An answer to the request is provided from the system, typically in the form of a message that includes one or possibly a plurality of so-called booking codes that are labels used to designate different prices that an airline is willing to sell tickets at. [Specification page 1, lines 20-29]

### Appellant's Invention

#### Claim 1

One aspect of Appellant's invention is set out in claim 1, a competitive, availability prediction system for predicting relative, competitive availability of seating on an airline flight. Appellant's FIG. 1 shows a competitive availability prediction system 10. The competitive availability prediction system includes a filter 12 to filter queries received by the system 10. The filter 12 includes rules that allow the filter 12 to pass through those queries that correspond to flights supported by a user of the competitive availability system 10, as well as selected competitors of that user. The competitive availability system 10 produces a prediction of the availability of a seat on a competitor's flight or flights, to determine how a competitor or competitors may respond to an availability request. The user of the competitive availability system 10 can decide whether and how to adjust its response from the availability system 74. [Specification page 3, line 24 to page 4 line 4]

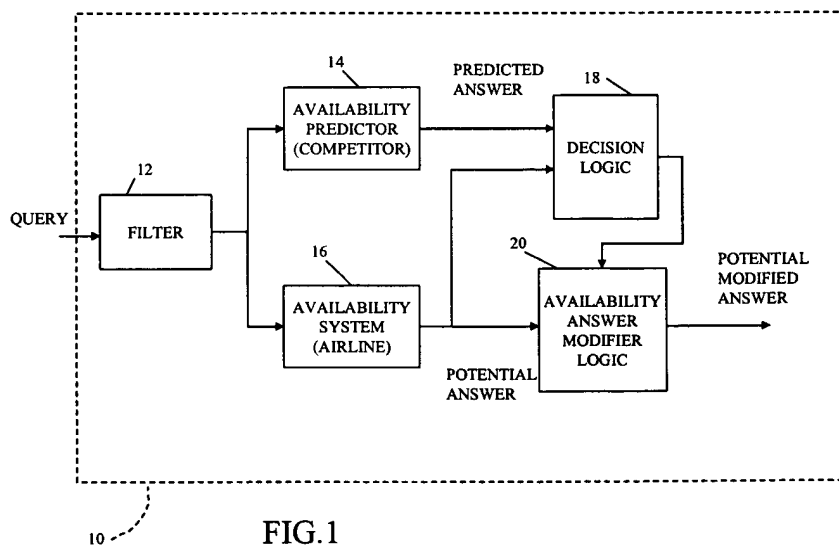


FIG.1

The inventive features of claim 1 include an availability predictor 14 [Specification page, 4 lines 9-10] that predicts seating availability on a competitive flight, an availability system that produces an actual availability response for a flight [Specification page 4, lines 17-20] and a computing system that includes decision logic 18 [Specification page, 4 lines 25-29] that compares the predicted answer from the availability predictor and the potential answer from the availability system to establish a decision with respect to actual availability.

In the typical case, the user of the competitive availability system 10 is an airline that desires to modify its actual availability response to an availability query that it receives based on how it predicts a competitor airline might respond to a similar query [Specification page 4, lines 5-9]. The filtered queries provided from filter 12 are fed to one or more availability predictors generally denoted as 14 [Specification page 4, line 11]. The availability predictors 14 are provided for each competitor, for which the user of the competitive availability system 10 desires to compare airline availability responses [Specification page 4, lines 12-14].

The filtered queries are fed to the actual availability system 16 of the airline that owns or uses the competitive availability system 10 [Specification page 4, lines 19-21]. The availability predictor 14 and the availability system 16 produce answers, [Specification page 4, lines 20-21], a predicted answer for the competitor and a potential availability answer for the user of the competitive availability system 10. [Specification page 4, lines 22-24] These answers are fed to decision logic 18. [Specification page, 4 lines 25] The decision logic 18 compares the answers to determine whether or not the actual answer that will be provided from the user's availability system 16 should be modified to take into consideration the relative competitive position of the competitor as represented by the predicted answer. [Specification page 4, lines 25-29]

FIG. 2A shows a process 30 incorporating decision logic 18' and modification logic 20 that is used in the system of FIG. 1. [Specification page 5, lines 21-23] The process 30 receives 32 the predicted and potential, actual responses from the availability predictor 14 and the availability system 16 respectively. The process 30 compares 34 the predicted and potential, actual responses to arrive at a decision whether to bias a modification towards making a seat more available or less available, or to remain neutral. [Specification page 5, lines 25-29] The process 30 modifies 36 the potential, actual availability response based upon the comparison and returns 38 the potential, actual availability response or a modified actual availability response to

the entity that issued the query in the first instance. [Specification page 5, line 29 to page 6 line 1].

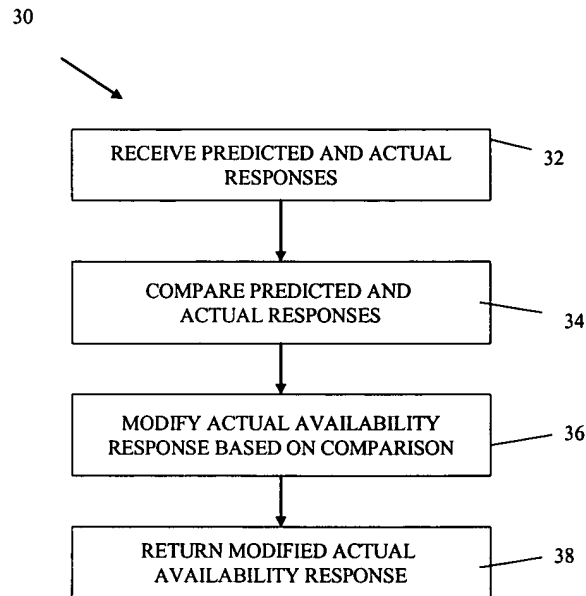


FIG. 2A

Claim 17

Claim 17 claims another aspect of the invention. Claim 17 is a method executed on a computer system for predicting relative, competitive availability of seating on an airline flight. [Appellant's FIG. 1 shows a competitive availability prediction system 10 including a computer system to predict relative competitive availability.] Claim 17 includes receiving by the computer system a request for availability of seating on an airline flight and executing in the computer system an algorithm to predict the seating availability on a competitive flight; [Specification page 4, lines 5-9]. Claim 17 also includes receiving by the computer system an actual availability response for a flight [Specification page 4, lines 22-24] and comparing the predicted answer from the availability predictor and the potential answer from the availability system to establish a decision with respect to actual availability. [Specification page 4, lines 25-29]

Claim 21

Another aspect of the invention is covered by claim 21. Claim 21 is directed to a computer program product residing on a computer readable medium for determining relative,

competitive availability of seating on an airline flight. The product includes instructions for execution on a computing device [Appellant's FIG. 1 shows a competitive availability prediction system 10 including a computer system to predict relative competitive availability.] The instructions produce a potential, actual availability response for a flight [Specification page 4, lines 22-24] and predict seating availability on a competitor's flight that is a competitive flight to the flight [Specification page, 4 lines 9-10]. The instructions compare the predicted answer and the potential, actual availability response to establish an actual seat availability answer [Specification page 4, lines 25-29] and send the actual seat availability answer [FIG. 2A ref 38, specification page 5.]

**(vi.) Grounds of Rejection to be Reviewed on Appeal**

(1) Claims 21-23 stand rejected under 35 U.S.C. 102(b) as being anticipated by Walker et al., U.S. Patent 5,897,620. Only claims 21-23 are rejected in the summary of this rejection. However, in the body of the rejection, the examiner also rejects claims 21-28. Appellant treats this rejection as a rejection of claims 21-28.

(2) Claims 1-3, 5-10, 14-19, 21-30 and 32 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Walker '620 and further in view of Talluri, U.S. Patent 6,263,315.

(3) Claim 4 stand rejected under 35 U.S.C. 103(a), as being obvious over Walker '620, in further view of Talluri '315, and in further view of Lynch et al., U.S. Patent 6,018,715.

(4) Claims 11-13 and 20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Walker '620, Talluri '315, and further in view of Lynch et al., U.S. Patent 6,119,094.

(5) Claims 24, 29 stand 30 were rejected under 35 U.S.C. 103(a) as being obvious over Walker '620, in further view of Lynch '715.

**(vii.) Argument**

**Anticipation**

"It is well settled that anticipation under 35 U.S.C. §102 requires the presence in a single reference of all of the elements of a claimed invention." *Ex parte Chopra*, 229 U.S.P.Q. 230, 231 (BPA&I 1985) and cases cited.

"Anticipation requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim." *Connell v. Sears, Roebuck & Co.*, 220 U.S.P.Q. 193, 198 (Fed. Cir. 1983).

"This court has repeatedly stated that the defense of lack of novelty (i.e., 'anticipation') can only be established by a single prior art reference which discloses each and every element of the claimed invention." *Structural Rubber Prod. Co. v. Park Rubber Co.*, 223 U.S.P.Q. 1264, 1270 (Fed. Cir. 1984), citing five prior Federal Circuit decisions since 1983 including *Connell*.

In a later analogous case the Court of Appeals for the Federal Circuit again applied this rule in reversing a denial of a motion for judgment n.o.v. after a jury finding that claims were anticipated. *Jamesbury Corp. v. Litton Industrial Prod., Inc.*, 225 U.S.P.Q. 253 (Fed. Cir. 1985).

After quoting from *Connell*, "Anticipation requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim," 225 U.S.P.Q. at 256, the court observed that the patentee accomplished a constant tight contact in a ball valve by a lip on the seal or ring which interferes with the placement of the ball. The lip protruded into the area where the ball will be placed and was thus deflected after the ball was assembled into the valve. Because of this constant pressure, the patented valve was described as providing a particularly good seal when regulating a low pressure stream. The court quoted with approval from a 1967 Court of Claims decision adopting the opinion of then Commissioner and later Judge Donald E. Lane:

[T]he term "engaging the ball" recited in claims 7 and 8 means that the lip contacts the ball with sufficient force to provide a fluid tight seal \*\*\*\*\* The Saunders flange or lip only sealingly engages the ball 1 on the upstream side when the fluid pressure forces the lip against the ball and never sealingly engages the ball on the downstream side because there is no fluid pressure there to force the lip against the ball. The Saunders sealing ring provides a compression type of seal which depends upon the ball pressing into the material of the ring. \*\*\* The seal of Saunders depends primarily on the contact between the ball and the body of the sealing ring, and the flange or lip sealingly contacts the ball on the upstream side when the fluid pressure increases. 225 U.S.P.Q. at 258.

Relying on *Jamesbury*, the ITC said, "Anticipation requires looking at a reference, and comparing the disclosure of the reference with the claims of the patent in suit. A claimed device is anticipated if a single prior art reference discloses all the elements of the claimed invention as arranged in the claim." *In re Certain Floppy Disk Drives and Components Thereof*, 227 U.S.P.Q. 982, 985 (U.S. ITC 1985).

#### Obviousness

"It is well established that the burden is on the PTO to establish a prima facie showing of obviousness, *In re Fritsch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (C.C.P.A., 1972)."

"It is well established that there must be some logical reason apparent from the evidence or record to justify combination or modification of references. *In re Regal*, 526 F.2d 1399 188, U.S.P.Q.2d 136 (C.C.P.A. 1975). In addition, even if all of the elements of claims are disclosed in various prior art references, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill in the art would have been prompted to combine the teachings of the references to arrive at the claimed invention. *Id.* Even if the cited references show the various elements suggested by the Examiner in order to support a conclusion that it would have been obvious to combine the cited references, the references must either expressly or impliedly suggest the claimed combination or the Examiner must present a convincing line of reasoning as to why one skilled in the art would have found the claimed invention obvious in light of the teachings of the references. *Ex Parte Clapp*, 227 U.S.P.Q.2d 972, 973 (Board. Pat. App. & Inf. 985)."

"The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Gordon*, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984).

Although the Commissioner suggests that [the structure in the primary prior art reference] could readily be modified to form the [claimed] structure, "[t]he mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." *In re Laskowski*, 10 U.S.P.Q. 2d 1397, 1398 (Fed. Cir. 1989).



"The claimed invention must be considered as a whole, and the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination." *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984).

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under Section 103, teachings of references can be combined only if there is some suggestion or incentive to do so. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984) (emphasis in original, footnotes omitted).

"The critical inquiry is whether 'there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination.'" *Fromson v. Advance Offset Plate, Inc.*, 225 U.S.P.Q. 26, 31 (Fed. Cir. 1985).

**(1) Claims 21-28 are not anticipated by Walker et al., U.S. Patent 5,897,620.**

**Claim 21**

Claim 21 calls for a computer program product ... for determining relative, competitive availability of seating on an airline flight. Claim 1 recites instructions ... to ... predict seating availability on a competitor's flight and compare the predicted answer and the potential, actual availability response to establish an actual seat availability answer. Claim 1 also recites instructions to send the actual seat availability answer.

The Examiner's characterization of what Walker discloses is not correct. Walker describes (column 8, lines 51-67):

**RMS (200) ... initially allocates inventory to the special fare listing corresponding to seats on the actual flights for the same route and day, which are forecasted to be empty at the time of departure. ... As shown in FIG. 4, the airline reservation systems (ARS) and the central reservation system (CRS) will each access the established flight schedule database, seat allocation database, and pricing and restrictions database to perform itinerary queries.**

Contrary to the contentions of the Examiner, Walker describes a conventional RMS system that allocates inventory to a special fare listing. However, this teaching says nothing about "instructions ... to ... predict seating availability on a competitor's flight that is a competitive flight to the flight and to compare the predicted answer and the potential, actual availability response to establish an actual seat availability answer and send the actual seat availability answer" as recited in claim 21.

On page 6 of the office action, Examiner states:

**(col. 4, lines 37-44, RMS system represent the computing system], w/ Col. 5 lines 18-25 [comparing actual demand to expected (forecasted demand, where decision is determining whether or not to allocate additional inventory or reduce/eliminate inventory).**

Walker neither describes nor suggests instructions to compare the predicted answer and the potential, actual availability response to establish an actual seat availability answer and send the actual seat availability answer. The examiner must give patentable weight to all of the limitations of the claim. Walker does not describe predicted answers as set out above. Walker also does not teach to compare a predicted answer and a potential actual availability response. Walker cannot anticipate claim 21 since it fails to show every element of claim 21 arranged as set out in the claim.

#### Claim 22

Claim 22 recites that the instructions to compare, bias the potential actual availability response based upon a relative competitive position of the competitor according to the predicted answer. The examiner contends Walker in Col. 9 lines 14-21 shows this feature. Walker discusses:

**An airline 100 can correct for forecasting errors, or competitive forces which have produced unanticipated excess capacity 530 on a specific route by lowering its fare/class on the actual flights. In accordance with the present invention, the airline 100 can also correct for such forecasting errors by increasing the inventory allocated to the special fare listing at a lower fare/class than the currently available fare/class on the actual flights.**

This teaching in Walker does not suggest any feature of claim 22. Neither in the quoted portion of Walker nor elsewhere in Walker, does Walker suggest a bias that determines whether the potential answer should be modified based upon the relative competitive position of the competitor represented by the availability predictor.

Walker discloses that given forecasting errors or competitive forces, unanticipated excess capacity can be corrected on a specific route by lowering fare/class on the actual flights or by increasing the inventory allocated to the special fare listing. Walker fails to teach any of the features of the base claim 21 and fails to teach the bias feature of claim 22. Walker's teaches to correct by a reallocation of seating to a special fare class or changing a booking code, Walker fails to suggest a bias of a potential answer from an availability system based upon the relative competitive position of the competitor represented by the availability predictor.

#### Claims 23-28

For the purposes of this appeal only, claims 23-28 may be treated as standing or falling together. Claim 23 is representative of claims 23-28.

Claim 23 includes instructions to modify the potential, actual availability response in response to the predicted answer and the potential availability answer to produce the actual seat availability answer. The examiner contends that Walker teaches this feature (at Col 9, lines 14-28) by using competitive forces to increase in inventory of availability of seats. This teaching of Walker is directed to allocations for a revenue management system and does not suggest instructions to modify the potential, actual availability response in response to the predicted answer and the potential availability answer to produce the actual seat availability answer.

Accordingly, claims 24-28 relate to predicted answers either directly or indirectly are distinct over Walker.

**(2) Claims 1-3, 5-10, 14-19, 21-30 and 32 are  
patentably distinct over Walker '620 in view of  
Talluri, U.S. Patent 6,263,315.**

#### Claims 1, 5 and 16

For the purposes of this appeal only, claims 1, 5 and 16 may be treated as standing or falling together. Claim 1 is representative of this group.

Claim 1 is directed to a competitive, availability prediction system for predicting relative, competitive availability of seating on an airline flight. Claim 1 requires an availability predictor that predicts seating availability on a competitive flight. The examiner contends that Walker (Col. 8 lines 39-49) disclose this feature by "seat allocation of competitive forces store once calculated, where the RMS represents the availability predictor," (Office Action page 6).

The Examiner's characterization of what Walker discloses is not correct. Walker does not disclose an availability predictor. Walker does not predict anything regarding seating availability and clearly does not suggest to predict seating availability on a competitive flight. Rather, Walker describes a conventional revenue management system (RMS) used by airlines to allocate the number of seats booked at full fare, and suggests a mechanism for determining the number of seats which can be allocated to a "special fare listing" (column 4, lines 66-67, and column 5, lines 1-2). However, the RMS system described in Walker allocates "actual" seats, and is completely dependent (whether based on prediction or otherwise) on data derived from actual bookings. As Walker describes (column 8, lines 51-67):

**RMS (200) ... initially allocates inventory to the special fare listing corresponding to seats on the actual flights for the same route and day, which are forecasted to be empty at the time of departure. ... As shown in FIG. 4, the airline reservation systems (ARS) and the central reservation system (CRS) will each access the established flight schedule database, seat allocation database, and pricing and restrictions database to perform itinerary queries.**

Contrary to the contentions of the Examiner, Walker (column 8, lines 39-50) describes that conventional RMS systems typically respond to competitive forces and other external events, such as fare wars or increased demand due to a large event, such as the Olympics, as indicated by the external events database. However, this teaching neither describes nor suggests, nor is even relevant to "an availability predictor that predicts seating availability on a competitive flight," as recited in claim 1.

Walker does not appreciate the problem that appellants seek to solve namely to determine seat availability of a competitor's without always making actual queries to the competitor's availability system, e.g., revenue management system (RMS). The recognition of an unrecognized problem militates in favor of patentability.

On page 6 of the office action, Examiner states:

**A computing system ... that compares the predicted answer from the availability predictor and the potential answer from the availability system to establish a decision with respect to actual availability ... (col. 4, lines 37-44, RMS system represent the computing system), w/ Col. 5 lines 18-25 [comparing actual demand to expected (forecasted demand, where decision is determining whether or not to allocate additional inventory or reduce/eliminate inventory)].**

The examiner also says that: "Walker fails to disclose decision logic or an algorithm, but does disclose that decisions are made according to inventory allocation in Col. 5, lines 18-25."

This is exactly the point - Walker does not teach the elements of Appellant's invention, as claimed in claim 1 "... a computing system that includes decision logic that compares the predicted answer from the availability predictor and the potential answer from the availability system to establish a decision with respect to actual availability.

In an attempt to provide the missing element of Appellant's claim 1, the Examiner, on page 3, further states:

**However, Talluri discloses: decision logic/an algorithm (Abstract, lines 1-5, [using control logic to support decisions to accept or deny requests for resource capacity (seats)], and Col. 5, lines 4-5[actually shows decision logic]/Col. 2, lines 30-55, shows that in control logic schemes, algorithms are used to computer parameters) Talluri discloses this limitation in an analogous art for the purpose of showing that logic means (by way of algorithms) are used to decide whether or not a seat is available. It would have been obvious to one of ordinary skill in the art... to include decision logic/ an algorithm with the motivation of determining seat availability in accordance with rules of decision logic.**

Talluri adds no further teachings to Walker. Talluri, like Walker, is directed to a revenue management system to accept or deny requests for resource capacity, e.g., the actual availability system element of claim 1. Talluri discloses:

**A revenue management software system supports decisions to accept or deny requests for resource capacity (seats, rooms, volume/weight, air time, etc.) using control logic that accesses multidimensional lookup tables of price values for each resource (flight leg, hotel day, etc.) (Abstract lines 1-3).**

The decision logic disclosed by Talluri is again related to a conventional RMS system. In that sense, Talluri is cumulative with the teachings of Walker. The disclosure says nothing about decision logic that compares the predicted answer from the availability predictor and the potential answer from the availability system to establish a decision with respect to actual availability.

Thus, whether or not Talluri has some relevant teachings regarding decision logic, neither Talluri nor Walker discloses decision logic that compares the predicted answer from the availability predictor and the potential answer from the availability system to establish a decision with respect to actual availability. The examiner must give patentable weight to the limitation of a computer system including decision logic that compares the predicted answer from the availability predictor and the potential answer from the availability system to establish a decision with respect to actual availability. That Talluri may disclose "decisions" and control logic has no bearing on a finding that Talluri is at all relevant to the subject matter of claim 1.

### Claim 2

Claim 2 adds the distinct feature that the decision of the decision logic is a bias that determines whether the potential answer should be modified based upon the relative competitive position of the competitor represented by the availability predictor. The examiner contends Walker in Col. 9 lines 14-21 shows this feature. Walker discusses:

**An airline 100 can correct for forecasting errors, or competitive forces which have produced unanticipated excess capacity 530 on a specific route by lowering its fare/class on the actual flights. In accordance with the present invention, the airline 100 can also correct for such forecasting errors by increasing the inventory allocated to the special fare listing at a lower fare/class than the currently available fare/class on the actual flights.**

This teaching in Walker does not suggest any of the features of claim 2. It does not suggest a bias that determines whether the potential answer should be modified based upon the relative competitive position of the competitor represented by the availability predictor.

Walker discloses that given forecasting errors or competitive forces, unanticipated excess capacity can be corrected on a specific route by lowering fare/class on the actual flights or by increasing the inventory allocated to the special fare listing. Walker fails to teach any of the

features of the base claim 1 and fails to teach that the action recited in claim 2. Whereas, Walker teaches to correct by a reallocation of seating to a special fare class or changing a booking code, Walker fails to suggest to bias a potential answer from an availability system based upon the relative competitive position of the competitor represented by the availability predictor.

### Claim 3

Claim 3 adds the distinct feature of modifying logic that is responsive to the availability response from the availability system and from the bias from the decision logic to modify the actual availability answer in accordance with the bias. The examiner admits that Walker does not disclose this feature and relies upon Talluri for teaching this feature (at Col 4, lines 4-9).

**This decision logic requires only a simple table lookup (database query or memory access) operation, which is very fast. It is capable of mimicking the decisions of nested allocation and traditional bid price controls, but provides additional flexibility to allow the threshold values to adjust to capacity and time changes. It also allows for easy calculation of maximum available capacity for any given type of request.**

Again, Talluri like Walker is directed to allocations for a revenue management system. Talluri teaches to use a series of tables to allocate multiple resources, e.g., legs of a flight network (Col. 3 lines 50-52). Again, Talluri provides thresholds based on actual allocations. Talluri does not suggest modifying logic that is responsive to the availability response from the availability system and from the bias from the decision logic to modify the actual availability answer in accordance with the bias.

### Claims 6-10

For the purposes of this appeal only, claims 6-10 may be treated as standing or falling together. Claim 6 is representative of this group of claims.

Claim 6 and adds the distinct feature that the decision from the decision logic can have a plurality of states. The examiner considers this feature taught by Walker at Col. 5 lines 19-25 "where it is shown that the actual demand can be either greater than or less than the expected demand (Office action page 9). This teaching is not suggestive of Claim 6. Again, Walker deals with actual demand and allocating or de-allocating additional inventory to the special fare listing,

not prediction of seat availability from a competitor. Walker's teaching is not the functional equivalent of a decision from the decision logic having a plurality of states.

Moreover, the examiner has already conceded that Walker fails to disclose decision logic (Office action page 6). How then can Walker suggest "the decision from the decision logic can have a plurality of states?" Again, Walker to the extent that it can be construed to teach a decision, is directed to a decision that pertains to demand, not a decision as to actual availability.

Clearly, Walker does not suggest the states delineated in claims 7-10. Claim 7 recites that one of the states is a neutral state that is does not tend to modify the potential answer received from the availability system is not suggested by a teaching that "remaining inventory = 0" (Office action page 10). Likewise, claim 8, recites one of states biases a potential answer towards answering that a seat is available and claim 9 recites that one of states biases a potential answer towards answering that a seat is not available are not taught by reducing or allocating inventory. Claim 10, which recites that the state depends upon the relative competitive position of the competitor represented by the availability predictor is not taught by [increasing inventory based on competitive forces] (Office Action page 9).

#### Claims 14 and 15

For the purposes of this appeal only, claims 14 and 15 may be treated as standing or falling together. Claim 14 is representative of this group of claims and adds the distinct feature that if the system determines that the competitor's available booking codes are at a lower price than those being offered by the user of the system, the system returns a bias towards making the seat available. Neither Walker nor Talluri suggests to examine predicted, available booking codes of a competitor.

Moreover, claim 14 which depends on claim 11, is improperly rejected based solely on a combination of Walker and Talluri, since claim 14 carries all of the limitation of base claim 11 and base claim 11 was rejected based a combination of Walker, Talluri and Lynch, U.S. Patent 6,119,094.



Claims 17 and 19

For the purposes of this appeal only, claims 17 and 19 may be treated as standing or falling together. Claim 17 is representative of this group of claims.

Claim 17 is directed to a method executed on a computer system of predicting relative, competitive availability of seating on an airline flight. Claim 17 requires receiving by the computer system a request for availability of seating on an airline flight and executing in the computer system an algorithm to predict the seating availability on a competitive flight. The examiner contends that Walker (Col. 13 lines 31-48) disclose this feature by "shows request for flight information for a specific itinerary wherein the traveler is notified of the potential availability," (Office Action page 6). Walker does not disclose executing in the computer system an algorithm to predict the seating availability on a competitive flight.

The Examiner's characterization of what Walker discloses is not correct. Walker does not predict anything regarding seating availability and clearly does not suggest an algorithm to predict the seating availability on a competitive flight. Rather, Walker describes "the potential availability of an unspecified-time ticket for the requested itinerary." However, the unspecified-time ticket described in Walker is a merely a different ticket class for the same airline that meets the traveler flights. Walker does not suggest to predict the seating availability on a competitive flight. Moreover, Walker teaching of "potential availability" of an unspecified-time ticket for the requested itinerary merely is used to tell the traveler that there is a listing for unspecified-time ticket for the requested itinerary, not whether the RMS system says that the seat is actually available, since Walker clearly states that the step 1415 "informs the traveler 105 that unspecified-time tickets are offered by the airlines." As Walker describes (column 8, lines 51-67):

**In step 1400 of FIG. 14a, a traveler 105 contacts his travel agent 110 and requests flight information for a specific itinerary. A specific itinerary necessarily includes the origin and destination locations together with the dates for travel, but may also include such information as travel times, airlines, etc. In step 1405, the travel agent 110 logs into a CRS 300 and queries the CRS 300 for all flights that meet the traveler's specifications. In step 1410, the CRS 300 retrieves the relevant flight information from the flight schedule database 240 and lists the information for the travel agent 110. In step 1415, the travel agent 110 reviews the information and determines whether there is a special fare listing for the requested itinerary.**

**If there is, the travel agent 110 notifies the traveler 105 of the potential availability of an unspecified-time ticket for the requested itinerary and informs the traveler 105 that unspecified-time tickets are offered by the airlines at a lower fare/class than conventional airline tickets.**

Claim 17 also includes comparing the predicted answer from the availability predictor and the potential answer from the availability system to establish a decision with respect to actual availability. For the reasons discussed above, Walker combined with Talluri do not teach this element of Appellant's claim 11.

**Claim 21-30 and 32**

Appellant contends that the Examiner's rejection of these claims under 35 U.S.C. is improper, or that the summary of the rejection is in error, because the examiner failed to set for any discussion of how these claims were obvious over Walker in view of Talluri.

Claims 21-30 and 32 are neither described nor suggested by any combination of references cited and Appellant stands by the argument made above regarding anticipation of these claims, since Walker alone or in combination with Talluri neither describes nor suggests the features of Claim 21 including a computer program product ... for determining relative, competitive availability of seating on an airline flight, instructions ... to ... predict seating availability on a competitor's flight that is a competitive flight to the flight and instructions to compare the predicted answer and the potential, actual availability response to establish an actual seat availability answer and send the actual seat availability answer.

Accordingly, claims 21-30 and 32 relate to predicted answers either directly or indirectly are distinct over Walker and Talluri.

**(3) Claim 4 is patentably distinct over Walker '620, in view of Talluri '315, and in further view of Lynch et al., U.S. Patent 6,018,715.**

**Claim 4**

Claim 4 depends from claim 1 and recites that the decision logic determines whether the prediction from the availability predictor indicates that a competitor is in a more favorable or less favorable competitive position than the answer produced by the availability system.

Claim 4 is distinct from Walker, Talluri and Lynch et al. The examiner takes the position that the combined Walker and Talluri system would have used this feature to with the motivation "of determining if the available seats on an airline are accommodating to customers" and uses Lynch to the limitation at Col. 7 lines 17-40.

Appellant contends that the initial motivation that Walker and Talluri would have included the limitation is of no import to the claimed limitation and is not suggested by the references. Clearly, a motivation related to determining if the available seats on an airline are accommodating to customers is not relevant to whether the decision logic determines that the prediction from the availability predictor indicates that a competitor is in a more favorable or less favorable competitive position than the answer produced by the availability system. Simply stated Lynch '715 does not teach this limitation by teachings related to fuzzy logic applied to travel plans.

**(4) Claims 11-13 and 20 are patentably distinct over Walker '620, Talluri '315, and further in view of Lynch et al., U.S. Patent 6,119,094.**

Claims 11-13 and 20

For the purposes of this appeal only, claims 11-13 and 20 may be treated as standing or falling together. Claim 20 is representative of this group of claims.

Claim 20 recites that the decision logic determines whether the competitor's available booking codes are at a lower price than the availability system indicates the user of the system can offer.

Neither Walker nor Talluri suggest to examine predicted, available booking codes of a competitor. Lynch '094 also does not examine predicted, available booking codes of a competitor. Lynch '094 (Col. 3 lines 59-63) discloses:

**Parameter generating engine module 16 may incorporate one or more genetic algorithms (discussed in more detail below) which function to define sets of parameters used in identifying alternate, low-cost travel arrangements. The operation of parameter generating engine module 16 is described below in more detail with reference to FIG. 4.**

Neither this passage nor any other passage in Lynch '094 or any of the other Lynch cited references suggests to examine predicted, available booking codes of a competitor.

**(5) Claims 24, 29 and 30 are patentable  
distinct over Walker '620, in further view of  
Lynch '715.**

Claims 24, 29 and 30.

For the purposes of this appeal only, claims 24, 29 and 30 may be treated as standing or falling together. Claim 24 is representative of this group of claims.

Claim 24 was rejected under 35 U.S.C. 103(a) as being obvious over Walker '620, in view of Lynch et al., U.S. Patent 6,018,715. However, in the body of the rejection the examiner also applied Talluri.

Claim 24 depends from claim 21 and recites that the instructions to compare determine whether the predicted answer indicates that a competitor is in a more favorable or less favorable competitive position than the potential, actual availability response produced by the availability system.

As with claim 4, claim 24 is distinct from Walker, Talluri and Lynch et al. The examiner uses the same motivation, that the combined Walker and Talluri system would have used this feature to with the motivation "of determining if the available seats on an airline are accommodating to customers" and uses the same teaching from Lynch '715 (Col. 7 lines 17-40).

Appellant contends that a motivation related to determining if the available seats on an airline are accommodating to customers is not relevant to whether the decision logic determines that the prediction from the availability predictor indicates that a competitor is in a more favorable or less favorable competitive position than the answer produced by the availability system and Lynch '715 does not teach this limitation by teachings related to fuzzy logic applied to travel plans.

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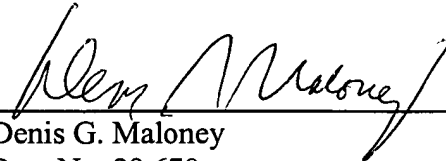
### Conclusion

Appellant submits, therefore, that Claims 1-30 and 32 are allowable over the cited art.  
Therefore, the Examiner erred in rejecting Appellant's claims and should be reversed.

Respectfully submitted,

Date: \_\_\_\_\_

1/7/05



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### **Appendix of Claims**

1. A competitive, availability prediction system for predicting relative, competitive availability of seating on an airline flight, the system comprises:

an availability predictor that predicts seating availability on a competitive flight;  
an availability system that produces an actual availability response for a flight; and  
a computing system that includes decision logic that compares the predicted answer from the availability predictor and the potential answer from the availability system to establish a decision with respect to actual availability.

2. The system of claim 1 wherein the decision of the decision logic is a bias that determines whether the potential answer should be modified based upon the relative competitive position of the competitor represented by the availability predictor.

3. The system of claim 1 further comprising:  
modifying logic that is responsive to the availability response from the availability system and from the bias from the decision logic to modify the actual availability answer in accordance with the bias.

4. The system of claim 1 wherein the decision logic determines whether the prediction from the availability predictor indicates that a competitor is in a more favorable or less favorable competitive position than the answer produced by the availability system.

5. The system of claim 1 wherein a decision as to an actual availability answer is based on the decision from the decision logic.

6. The system of claim 1 wherein the decision from the decision logic can have a plurality of states.

7. The system of claim 6 wherein one of the states include a neutral state that is does not tend to modify the potential answer received from the availability system.

8. The system of claim 6 wherein one of states biases a potential answer towards answering that a seat is available.

9. The system of claim 6 wherein one of states biases a potential answer towards answering that a seat is not available.

10. The system of claim 6 wherein state depends upon the relative competitive position of the competitor represented by the availability predictor.

11. The system of claim 3 wherein the decision logic determines whether the competitor's available booking codes are at a lower price than those that the availability system indicates the user of the system can offer.

12. The system of claim 11 wherein if the competitor's available booking codes are not at a lower price, then the system can return a bias towards making the seat unavailable.

13. The system of claim 12 wherein if the competitor's available booking codes are not at a lower price, then the system can test whether ~~the~~ an original query was for a low cost fare and return a bias towards making the seat not available if the original query was for a low fare.

14. The system of claim 11 wherein if the competitor's available booking codes are at a lower price than those being offered by the user of the system, the system returns a bias towards making the seat available.

15. The system of claim 11 wherein if the competitor's available booking codes are at a lower price than those being offered by the user of the system, the system determines whether the query was for a high cost fare, and returns a bias towards making the seat available if for a high cost fare.

16. The system of claim 1 wherein the decision returned changes the availability message from the availability system.

17. A method executed on a computer system of predicting relative, competitive availability of seating on an airline flight comprises:

receiving by the computer system a request for availability of seating on an airline flight and executing in the computer system an algorithm to predict the seating availability on a competitive flight;

receiving by the computer system an actual availability response for a flight; and  
comparing the predicted answer from the availability predictor and the potential answer from the availability system to establish a decision with respect to actual availability.

18. The method of claim 17 wherein comparing produces a decision that is a bias that determines whether the potential answer should be modified based upon the relative competitive position of the competitor represented by the availability predictor.

19. The method of claim 17 further comprising:  
modifying the actual availability answer in accordance with the bias.

20. The method of claim 17 further comprising:  
determining whether the competitor's available booking codes are at a lower price than those which the availability system indicates the user of the system can offer.

21. A computer program product residing on a computer readable medium for determining relative, competitive availability of seating on an airline flight, comprises instructions for causing a computing device to:

produce an potential, actual availability response for a flight;  
predict seating availability on a competitor's flight that is a competitive flight to the flight;



compare the predicted answer and the potential, actual availability response to establish an actual seat availability answer; and  
send the actual seat availability answer.

22. The computer program product of claim 21 wherein the instructions to compare, biases the potential actual availability response based upon a relative competitive position of the competitor according to the predicted answer.

23. The computer program product of claim 21 further comprising instructions to:  
modify the potential, actual availability response in response to the predicted answer and the potential availability answer to produce the actual seat availability answer.

24. The computer program product of claim 21 wherein the instructions to compare determine whether the predicted answer indicates that a competitor is in a more favorable or less favorable competitive position than the potential, actual availability response produced by the availability system.

25. The computer program product of claim 21 wherein the predicted answer has a plurality of states.

26. The computer program product of claim 25 wherein the one of the states is a neutral state that is does not tend to modify the potential answer received from the availability system.

27. The computer program product of claim 21 wherein the one of states biases the potential, actual availability response towards producing the actual answer that a seat is available.

28. The computer program product of claim 21 wherein one of states biases the potential, actual availability response towards producing the actual answer that a seat is not available.

29. The computer program product of claim 21 wherein the instructions to compare determines whether the competitor's available booking codes are at a lower price than those that the user of the product can offer.

30. The computer program product of claim 29 wherein if the competitor's available booking codes are not at a lower price, then the instructions return a bias towards making the seat unavailable.

Claim 31 is canceled.

32. The computer program product of claim 29 wherein if the competitor's available booking codes are at a lower price than those being offered by the user of the program, the instructions return a bias towards making the seat available.